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Waste-To-Fuel: How To Make A Challenge An Opportunity

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An entrepreneurial company is planning to take a new approach to the old adage 'making money from old rope'.

Instead of splitting used hemp to re-sell, Enerkem – the company in question – is taking solid municipal waste and turning it into fuels and chemicals through a proprietary process that involves further sorting of waste feed material and then chemistry conversion of the remaining feedstock through a gasifier as well as a fluidised bed.

The process takes solid heterogeneous and homogeneous waste and converts it into methanol and ethanol fuel as well as useful chemicals such as ethylene, propylene, acrylic acids and high-level alcohol.

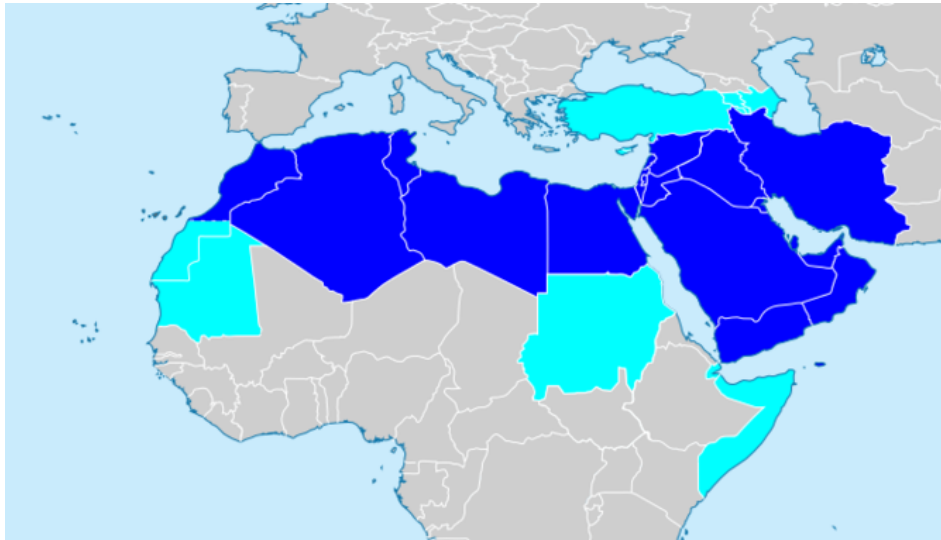
The process diverts waste away from landfill while creating a useful set of products that can be sold on to companies downstream. This is particularly useful in countries with requirements for renewably-sourced ethanol in fuel – such as the EU.

Enerkem has just opened its first commercial-scale pilot facility near Alberta, Canada. The Alberta test facility can take around 180,000 tonnes of trash and convert it into 38 million litres (approximately 10 million gallons) of fuel.

If it proves to be a success the company wants to expand rapidly across North America and internationally. "We're seeing opportunities in China and seeing opportunities in Gulf oil-producing nations," says Tim Cesarek, Enerkem senior vice-president. "We're in discussions throughout the GCC [Gulf Cooperation Council] and MENA [Middle East North Africa] regions and we're also looking at other opportunities in the EU. As well as fuel additives, there are a number of chemical companies that are focused on circular economy and sustainability that are interested."

The process can be modified depending on local needs. For example the process could be modified to produce electricity in areas where power would be more valuable.

The company plans to licence its technology and sell equipment to overseas partners and is expecting a major announcement to come from the MENA region in the near future, Cesarek adds.



English: Middle East and North Africa (Photo credit: Wikipedia)

The company is a demonstration of the ‘circular economy’ business model, which is growing in popularity particularly driven by the added green emphasis – both from regulatory and social sources.

Currently the major driver of interest in the system is a lack of landfill space, says Cesarek. But municipalities and private enterprises are also recognising the potential to source required ethanol or chemical components at a potentially lower-cost, he adds.

A circular economy business model can be quite effective, with a business paid to collect the waste it uses as feedstock and then paid for the resulting products produced. Whether a company is collecting used cooking oil for conversion to bio-diesel or food waste for use in an anaerobic digestion facility, tapping into this growing area could be a lucrative opportunity for any budding entrepreneur.